

*AF/CPW*

December 9, 2008

TO: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

FROM: Stephen B. Ackerman, Reg. No. 37,761
28 Davis Ave.
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SUBJECT: Serial #: 10/067,463 ✓
File Date: 02/04/2002
Inventor: V. Orboubadian
Title: Method and Systems for Embedding Camera
Information in Images
Art Unit: 2622
Examiner: Kelly L. Jerabek

APPEAL BRIEF

Dear Sir:

In response to the Final Rejection of Claims 1-16 and 26-25 dated July 15,
2008 for the above identified Application for Patent please accept this Appeal Brief.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States
Postal Service as first class mail in an envelope addressed to: Commissioner for Patents,
P.O. Box 1450, Arlington, VA 22313-1450 on December 9, 2008.

Signature *[Signature]* Date: December 9, 2008

Name Stephen B. Ackerman, Reg. #37,761

The Commissioner is hereby authorized to charge payment of the fee of \$270.00 associated with this communication to Deposit Account No. 19-0033. A duplicate copy of this sheet is enclosed.

With Best Regards,

Stephen B. Ackerman, Reg. No. 37,761

REAL PARTY IN INTEREST

The real parties in interest is the assignee, Digital Imaging Systems GmbH Kirchheim/Teck-Nabern, Germany. An assignment has been recorded in this case.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF THE CLAIMS

Claims 1-16, and 26-35 are pending in the Patent Application and have been rejected. Claims 17-25 have been cancelled. This appeal is to the rejection of Claims 1-16, and 26-35. The Claims Appendix has a Listing of the Claims in numerical sequence.

STATUS OF THE AMENDMENTS

No amendments have been filed subsequent to the final rejection and there are no amendments pending.

SUMMARY OF THE CLAIMED SUBJECT MATTER

INDEPENDENT CLAIMS:

1. A method of embedding camera information and image capture related information in a digital form of an image, comprising:

receiving information on a first static camera characteristic 148 (Fig. 1b, page 11, lines 8-16) suitable to enhance image reproduction (page 11, line 30 – page 12, line 2, page 15, lines 20-23);

receiving information on a first static camera characteristic suitable to identify a single camera that is the source of the image by embedding unique single camera characteristics (page 12, line 24-line 30, page 15, lines 20-23);

receiving camera setting information related to a first captured digitized image (page 11, line 22-line 30);

generating an encryption key 204 (Fig. 2, page 13, lines 14-16) based at least in part on the first static camera characteristic;

embedding a watermark 146 (Fig. 1B, page 9, lines 14-19) in said first

captured digitized image (page 3, lines 23-31), wherein the watermark contains at least a portion of the information on the first static characteristic (page 13, lines 19-20) and at least a portion of the camera setting information (page 2, lines 13-17) related to said first captured digitized image; and

encrypting the watermark using the encryption key 206, 204 (Fig. 2, Fig. 3, page 13, lines 19-20).

8. A digital camera system, comprising:

an imager 102, 120 (Fig. 1, page 6, lines 21-25);

a first static camera characteristic 148 (Fig. 1b, page 11, lines 8-16)

associated with the imager in regard of enhancing image reproduction (page 11, line 30 – page 12, line 2, page 15, lines 20-23);

a first static camera characteristic associated with the imager in regard of identifying a single camera (page 12, lines 24 - 30) that is the source of an image by embedding unique single camera characteristics (page 12, lines 3-4);

a first variable camera setting (page 11, lines 23-30);

a watermark generator 206 used to embed in the form of a watermark at least one of said first static camera characteristic 148 (Fig. 1b, page 11, lines 8-16) and said first variable camera setting information (page 11, lines 23-30) in an image captured by the camera; and

a key generator 204 (Fig. 2, Fig. 3, page 13, lines 19-28) configured to generate an encryption key used to encrypt the watermark (page 13, lines 14-16).

26. A method of including camera information and image capture related information in association with a digital form of an image, comprising:

capturing an image (page 6, lines 30-31):

digitizing the image (page 7, lines 16-17);

receiving information on a first static camera characteristic 148 (Fig. 1b, page 11, lines 8-16) suitable to enhance image reproduction (page 11, line 30 – page 12, line 2, page 15, lines 20-23);

a first static camera characteristic associated with the imager in regard of identifying a single camera (page 12, lines 24-30) that is the source of an image by embedding unique single camera characteristics (page 12, lines 3-4);

receiving camera setting information related to a first captured digitized image (page 11, lines 22- 30);

inserting in a data set (Fig. 6B, page 15, lines 12-19, page 3, lines 5-8) associated with the digitized image at least a portion of the information on the first static characteristic; and

transmitting the digitized image and the data set to an image processor (page 5, lines 12-17, page 18, lines 3-7)..

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether Claims 1-8, 10-16, and 26-35 are unpatentable under 35 USC 103(a) over Narayanaswami et al. (US 2003/0011684) in view of Inoue et al. (US 6,273,535) and further in view of Safai (US 6,642,956) and whether Claim 9 under 35 U.S.C. 103(a) is being unpatentable over Narayanaswami et al. (US 2003/0011684), in view of Inoue et al. (US 6,273,535) , further in view of Safai (US 6,642,956) and further in view of Isnardi et al. US 6,037,984).

ARGUMENT

Rejection of Claims 1-8, 10-16, and 26-35 under 35 USC 103(a) as being unpatentable over Narayanaswami et al. (US 2003/0011684) in view of Inoue et al. (US 6,273,535) and further in view of Safai (US 6,642,956)..

Claims 1-8, 10-16 and 26-35 describe methods and a camera system for **embedding** camera information and image capture information in a digital form of an image. These camera and image capture information comprise information on a first camera characteristic **suitable to enhance image reproduction**, information on a first static camera characteristic **suitable to identify a single** camera that is the source of the image by embedding unique single camera characteristics. Therefore the image can be printed, using the embedded information to enhance the reproduction, and the camera, which has taken the image, can be identified anywhere and anytime without requiring the presence of the camera.

Applicant believes that a combination of Narayanaswami with Inoue and with Safai is non-obvious to achieve the instant invention.

In the reply submitted April 15, 2008, there were several points made. The first is that Narayanaswami discloses an image capturing system and method for automatically watermarking a plurality of recorded camera and image parameters such as the location (latitude, longitude and altitude), orientation of the principal axis of the camera, whether

the camera is in landscape mode or portrait mode, camera velocity, photographer information, time and date, zoom factor, shutter speed, flash on/off, autofocus distance, lightmeter reading, focal length and aperture into every captured image and to verify the authenticity of an image, while the claimed invention discloses “**embedding information suitable to enhance image reproduction**” and information “**suitable to identify a single camera** that is the source of an image”.

It should be noted that Narayanaswami does neither disclose “**receiving information on a first static camera characteristic suitable to enhance image reproduction**” , nor “receiving information on a first static camera characteristic **suitable to identify a single camera that is the source of the image by embedding unique single camera characteristics**” as the claimed invention does in base claim 1.

In regard of Inoue it should be noted that Inoue discloses a complete different method of storing camera or image related information because Inoue teaches a camera wherein input device type unique information, the image sensed and additional information are stored in **three different memories** and the printer has to be **directly attached** to the camera, while the key point of the claimed invention is “**embedding camera information and image capture related information in a digital form of an image**”.

Furthermore it should be noted that a combination of the invention of Narayanaswami, disclosing an image capturing system and method for automatically

watermarking a plurality of recorded camera and image parameters such as the location (latitude, longitude and altitude), orientation of the principal axis of the camera, with the invention of Inoue, disclosing an image forming system, wherein image related information is stored in **three memories** of a camera, is believed be non-obvious because both inventions are using very different methods for storing related information.

Applicant believes therefore that any combination of Narayanaswami with Inoue is non-obvious because the method used by of Inoue for storing in three different memories of a camera is completely different to the method of storing related information by embedding in a camera disclosed by the claimed invention .

Additionally Inoue discloses that for printing a **printer has be directly connected** to the **camera** , which has taken the image, while the claimed invention discloses systems and methods where the image could be send anywhere for printing because the related information to enhance reproduction is **embedded within the image**. Applicant believes that therefore a combination of Narayanaswami with Inoue is **non-obvious** and **wouldn't work** because **none of the applied references, or any combination** thereof, address or suggest a method for printing images any place or any time using related information to enhance reproduction **embedded within the image**. .

Furthermore it should be noted that Safai is using very different methods for storing information compared to the claimed invention. Safai uses not “embedding a watermark in said first captured digitized image” as the claimed invention does. The word “**watermark**” does **not even appear** in the description of Safai. Safai discloses

instead a complete different technology for an authenticity stamp than the claimed invention does by applying a watermark in a digital image. Safai discloses (col.15, lines 14-20):

“The digital image to be authentication stamped and the authenticating information are then processed 1010 using for example, a one-way HASH algorithm. The resulting image digest 1015 is encrypted 1020 using a secure key to form an digital authentication stamp 1025 **which is appended to the digital image 1030.**”

It is to be noted that Safai discloses **appending an authenticity stamp** to a digital image while the claimed invention is **embedding a watermark** in a digital image. Both technologies are very different and Applicant believes that a combination of Safai with Narayanaswami and with Inoue is non-obvious because all three disclosures are using very different methods for storing information.

Applicant believes that it would be non-obvious to combine the invention of Narayanaswami, disclosing an image capturing system and method for automatically watermarking a plurality of recorded camera and image parameters such as the **location** (latitude, longitude and altitude), **orientation of the principal axis of the camera**, with the invention of Inoue, disclosing an image forming system, wherein image related information is stored in **three memories** of a camera, and “the digital **camera** is **connected to a printer** by, e.g., an IEEE1394 I/F, and further combine with the invention of Safai, disclosing **appending an authenticity** stamp to a digital image, to achieve the claimed invention because, as outlined above, each of these three invention is using completely different technologies to store this information.

The examiner in the **Response to Arguments** section on pages 5 and 6 of the July 15, 2008 Office Action reinforces that “both the Inoue and Safai references disclose digital image capturing systems that are capable of storing additional information in association with captured images. Therefore, the examiner maintains that the Inoue and Safai references are analogous art”. As outlined above applicant believes that a combination of these references is non-obvious due to the completely different methods to store relevant information and a combination wouldn’t work in regard of printing images anytime and anywhere without requiring the camera, which has taken the image to be printed.

The same arguments apply for claim **8** and for claim **26** as for claim **1** outlined above.

Claim **9** is a dependent claims upon base claim **8** which is believed to be patentable according the arguments above.

Therefore, as the Supreme Court has stated, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. Since Narayanaswami is in the field of verifying the authenticity of an image and parameters such as location, orientation of the principal axis of the camera, and time and date by watermarking, Inoue is in the field of storing additional information as image sensing conditions in three different memories,

and as Safai is in the field of a digital camera and methods for using a digital camera having a programmable processor providing a flexible operation of the digital camera, there is not a clear reason that would have prompted a person of ordinary skill in the relevant field to combine Narayanaswami with Inoue and with Safai. It can be argued that Narayanaswami is not pertinent to the instant application, since one ordinarily skilled in the art would not logically be expected to combine the authenticity aspects of Narayanaswami with the storing of image additional information in additional memories of Inoue and with the digital image processor for a digital camera of Safai. This is especially true, since the language of Narayanaswami does neither explicitly disclose information on a first camera characteristic suitable to enhance image reproduction, nor information on a first static camera characteristic suitable to identify a single camera that is the source of the image. Therefore independent claims 1, 8 and 26 should be allowed since there is no obvious reason to combined Carpenter with Murata. Similarly, dependent claims 2-7, 9-16 and 27-35 which depend on independent claims 1, 8 and 26 should now be allowed.

SUMMARY

It is believed that Claims 1, 3-6, 19 and 21-24 distinguish patentably from the references and should be allowed.

Applicant requests that the Board of Appeals reverse the final rejection of Claims 1-8, 10-16 and 26-35 under 35 U.S.C. 103(a) as being unpatentable over Narayanaswami et al. (US 2003/0011684) in view of Inoue et al. (US 6,273,535) , and further in view of Safai (US 6,642,956).

Furthermore Applicant requests that the Board of Appeals reverse the final rejection of Claim 9 under 35 U.S.C. 103(a) as being unpatentable over Narayanaswami et al. (US 2003/0011684) in view of Inoue et al. (US 6,273,535) , further in view of Safai (US 6,642,956) and further in view of Isnardi et al. US 6,037,984).

Claims 17-25 have been cancelled.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'S. B. Ackerman', with a stylized flourish extending to the right.

Stephen B. Ackerman, Reg. No. 37,761

CLAIMS APPENDIX**Listing of Claims:**

1. A method of embedding camera information and image capture related information in a digital form of an image, comprising:
 - receiving information on a first static camera characteristic suitable to enhance image reproduction;
 - receiving information on a first static camera characteristic suitable to identify a single camera that is the source of the image by embedding unique single camera characteristics;
 - receiving camera setting information related to a first captured digitized image;
 - generating an encryption key based at least in part on the first static camera characteristic;
 - embedding a watermark in said first captured digitized image, wherein the watermark contains at least a portion of the information on the first static characteristic and at least a portion of the camera setting information related to said first captured digitized image; and
 - encrypting the watermark using the encryption key.
2. The method as defined in Claim 1, wherein the first static camera characteristic is an camera image sensor bad pixel characteristic.
3. The method as defined in Claim 1, wherein the first static camera characteristic is related to a sensor current value.

4. The method as defined in Claim 1, wherein the first static camera characteristic is related to a camera image sensor sensitivity.
5. The method as defined in Claim 1, wherein the camera setting information includes information related to the flash intensity used to capture the first captured digitized image.
6. The method as defined in Claim 1, further comprising including information in the watermark related to the ambient light present when the image was captured by the camera.
7. The method as defined in Claim 1, further comprising including at least a first dynamically measured camera characteristic in the watermark.
8. A digital camera system, comprising:
 - an imager;
 - a first static camera characteristic associated with the imager in regard of enhancing image reproduction;
 - a first static camera characteristic associated with the imager in regard of identifying a single camera that is the source of an image by embedding unique single camera characteristics;
 - a first variable camera setting;
 - a watermark generator used to embed in the form of a watermark at least one of said first static camera characteristic and said first variable camera setting information in an image captured by the camera; and
 - a key generator configured to generate an encryption key used to encrypt the watermark.

9. The digital camera system as defined in Claim 8, wherein the watermark is visually perceptible.
10. The digital camera system as defined in Claim 8, wherein the watermark is visually imperceptible.
11. . The digital camera system as defined in Claim 8, wherein said first variable camera setting is a shutter speed.
12. The digital camera system as defined in Claim 8, wherein said first variable camera setting is an aperture setting.
13. The digital camera system as defined in Claim 8, wherein said first variable camera setting is a flash setting.
14. The digital camera system as defined in Claim 8, wherein said first static camera characteristic is related to an imager current.
15. The digital camera system as defined in Claim 8, wherein said first static camera characteristic is related to defective pixels associated with the imager.
16. The digital camera system as defined in Claim 8, wherein said first static camera characteristic is gamma information.

Claims 17-25 cancelled

26. A method of including camera information and image capture related information in association with a digital form of an image, comprising:

capturing an image;

digitizing the image;

receiving information on a first static camera characteristic suitable to enhance image reproduction;

a first static camera characteristic associated with the imager in regard of identifying a single camera that is the source of an image by embedding unique single camera characteristics;

receiving camera setting information related to a first captured digitized image;

inserting in a data set associated with the digitized image at least a portion of the information on the first static characteristic; and

transmitting the digitized image and the data set to an image processor.

27. The method as defined in Claim 1, wherein said unique single camera characteristics comprise an image capture device serial number.

28. The method as defined in Claim 1, wherein said image capture related information comprises information about the user who has taken an image.

29. The method as defined in Claim 28, wherein said user information comprises a user identification.
30. The camera system as defined in Claim 8, wherein said unique single camera characteristics comprise an image capture device serial number.
31. The camera system as defined in Claim 8, wherein said image capture related information comprises information about the user who has taken an image.
32. The camera system as defined in Claim 31, wherein said user information comprises a user identification.
33. The method as defined in Claim 26, wherein said unique single camera characteristics comprise an image capture device serial number.
34. The method as defined in Claim 26, wherein said image capture related information comprises information about the user who has taken an image.
35. The method as defined in Claim 34, wherein said user information comprises a user identification.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.